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Traumatic Renal Artery Rupture Following a Fall: A Fatal Occupational Accident

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with low accessibility took longer to be accessed by flies; (2) larger odour diffusion surfaces increased fly attraction; and, (3) flies more readily accessed traps through larger holes than through an equivalent surface area made up of smaller holes.

In a forensic-entomology context, results suggest that both accessibility and odor effusion should be considered together to assess the possible time that might elapse between death and first arrival by flies.

Entomology, PMI Estimation, Indoor Cases

G101 Traumatic Renal Artery Rupture Following a Fall: A Fatal Occupational Accident

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After attending this presentation, attendees will understand the importance of full forensic investigations in establishing the manner of death in occupational deaths. Circumstantial data and autopsy findings, together with a detailed workplace investigation, also are fundamental for the identification of legal responsibilities.

This presentation will impact the forensic science community by emphasizing the fact that, in some circumstances, the forensics have to take into account the traumatic involvement of vascular structures, even without external major injuries. From this perspective, the autopsy is crucial, mainly if death occurred at the time of the accident or immediately after and other causes (natural death, drug or alcohol abuse) must be evaluated.

Presented is a case of an occupational death due to rupture of the left renal artery in closed thoracic-abdominal trauma, after a fall from a height. Blunt renal artery injury is a relatively rare finding. The literature demonstrates an incidence of 0.08% of all blunt abdominal traumas, occurring in 1% to 4% of patients with renal injury. The most common cause is motor vehicle accidents; other causes include a direct blow to the chest or abdomen and a fall from a height. All of these mechanisms result in sudden deceleration or crush injuries, affecting the renal parenchyma or the vascular pedicle. Moreover, a traumatic ruptured renal artery, without grossly demonstrable kidney damage, is also unusual.

In the case presented, a 47-year-old man accidentally fell from a height of 2.5 meters while he was working on a scaffold. The worker was taken to the local hospital, but he remained unconsciousness and unresponsive. A rounded bruise of the left thoracic wall was noticed. At echocardiography, a hematoma was observed at the upper left abdominal quadrant. The patient was intubated and, despite the cardio-pulmonary resuscitation, he died 30 minutes later. With the goal of better understanding the dynamics of the event, a medicolegal autopsy and crime scene investigation was performed.

The shirt he wore showed a soft rounded mark on the left side of the chest. The external examination of the body showed only a rounded bruise of seven centimeters in diameter on the left hypochondrium. At autopsy, fractures of eight ribs were found (the majority to the left), with perilesional hemorrhages with nearly 100cc of fresh blood in pleural cavities. The abdominal cavity displayed two litres of fresh blood and clots. A complete rupture of the left renal artery was found at one centimeter from the origin from the abdominal aorta. No alcohol or drugs of abuse were found in the fluids collected at autopsy. The cause of death was identified as hemorrhagic shock due to the laceration of the left renal artery.

Frames of the surveillance cameras were acquired, showing the man sliding off the scaffold (made of metallic beams and wooden traverses) and falling on the left side of the body, without displaying where he landed.

At the workplace investigation, a footprint on the external side of the scaffold was found, where the victim was working; the footprint matched shoes worn by the worker. On the grassy ground below, was

a metallic pedestrian gate with a 1-meter-high hinge post placed just below the side of the scaffold, 2.52 meters from the footprint. The final reconstruction of the fatal accident concluded the man had fallen onto the gate hinge post, hitting the left side of the thorax; the blunt injury caused the rib fractures and the laceration of the left renal artery without any other injury of internal organs.

This report of isolated renal artery rupture represents an unusual finding, extremely rare following blunt abdominal trauma, and accounts for less than 0.1% of all trauma patients. Moreover, traumatic renovascular injuries occur most often in multiple injury patients. In the presented case, the preliminary reconstruction of the work-related fatality was not clear before the autopsy as there were no major external lesions. Therefore, the autopsy detected the cause of the death, allowing the real traumatic mechanism to be traced.

Traumatic Artery, Occupational Fatality, Workplace Investigation

G102 Forensic Pathology Considerations in the Transgender Population

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After attending this presentation, attendees will be able to describe the possibilities of cause/manner of death in the transgender population based on their reported marginalization and lifestyle risk factors. Attendees will be aware of the increased proportion of viral disease, and the importance of variable medical and/or surgical transition features.

This presentation will impact the forensic science community by increasing awareness of the challenges of postmortem examination of transgender individuals.

Transgender (TG) refers to individuals who express their gender differently than expected by society based on their natal sexual anatomy, with a range of gender variant identities. A minority have undergone "full" surgical sexual transition. Their lifestyle risk factors, as reported primarily in a large study with greater than 7,000 respondents, apply to all TGs. It is important to recognize persons who identified as transgender as there are likely to be a number of possibilities and factors contributing to death. Forensic pathologists should be aware that information about sexual identity may not be specifically sought or provided, and changes may not be obvious upon examination.

There are only a few somewhat sensational case reports on TGs in the forensic literature. Studies are logistically difficult, and there are few cohort studies.

TGs face significant barriers to medical care. For those few with insurance, it is unlikely to cover expanded recommendations for health care, or the costs of medical/surgical transgender affirmation interventions. Disturbingly, in medical settings, 19% have been refused care, 28% reported harassment, 2% have been the recipients of violence, and 50% reported that their physicians lacked treatment knowledge. Many eschew health care, and natural conditions may be neglected.

Routine health care maintenance is not simple, because they require surveillance for conditions affecting both the natal and surgically-created sex organs, as well as conditions secondary to hormone use (the effects of which remain unclear). Up to 50% of TGs have used "illegitimate" source hormones. Some inject foreign substances for cosmesis, with possible systemic complications. Self-mutilation is common.

Rates of substance abuse (alcohol, drugs, tobacco) and psychiatric illness are significantly greater among TGs.

Almost all report bias, discrimination, "transphobia," and frequently assault. The homicide rate is unknown, although there have been prominent cases in the media (and in film). The U.S. Hate Crimes Prevention Act was expanded to include a victim's actual or perceived gender or orientation.

Analysis was performed on 33 TG individuals who presented to DOFM, Glebe, between 1993 and the present. Although this number